

Work Order ID 58805

Wednesday, May 19, 2010 9:22:50 AM



Page 1

Item ID: D350-636-012

Accept



Setup Start



Revision ID:

Item Name: Skidtube RH

Stop



Start Date: 5/18/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 5/25/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

10/5/19

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D2750

Rev F

0.00

100



DC

DOCUMENT CONTROL

Memo

0.00

Document Control

Photocopy blue file and type labels per PPP D350-636-012 CHG 005

S. Vologin

H. For CL 10/06/10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

110

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1- Mark cut line on aft end of D2600-3-Bent using Jig DT 8150. Cut to length as per Dwg D2750. Deburr end

2-Drill pilot holes as per Dwg D2750 sheet 5 (D2750-2 details).Drill using drill Jig DT8150 & DT8863 .

3- Mark fwd end for cutting using Drill Jig DT 8150 & DT8863 and cut as per dwg D2750. Deburr.

4- Drill fwd step holes using DT9616. Ensure proper positioning.

5-Drill pilot holes for blade fitting bolts using DT8983. Open to 0.500"

6- locate DT8329 off of blade fitting bolt holes and drill pilot holes blade fitting.

7-Open up holes for Detail K to 0.375" (4 holes per side) blade fitting location holes to 0.500" (total of 4 holes per side) as per dwg D2750. Open holes for ground handling and detail L to 0.500" (8 holes per side)

8-Drill pilot holes for wearplates as per Dwg D2750 using DT8108. Open to 0.297".

9-Open up holes of Detail J to 0.297" (total of 2 holes per side)

10-Weld D2744 Cap as per Dwg D2750 and QSI 004.Fill grooves in bend left from bending as per QSI 004

A/R Aluminum Rod

Batch: M112860

BE 10/05/25

M 10/5/25

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



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--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

11-Grind welds flush as per Dwg D2750

12- scribe batch #.

4/10/5/25

120

QC10- Inspect visual per QSI004- ground welds

0.00

8/10/5/25



QC

Memo

0.00

Quality Control

130

QC5- Inspect part completeness to step on W/O

0.00

8/10/5/25



QC

Memo

0.00

Quality Control

(H)

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Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

140

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing

1 H 10/5/25

150

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

(X1) 0 BE 10/05/25

Dart Aerospace Ltd

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start
Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	Skidtubes	0.00							
Skidtubes	Memo	0.00							
Skidtubes	1-Open up holes of Detail L and ground handling to 0.625" (total of 8 holes per side) as per dwg D2750.								
	2-Open up holes of Detail K to 0.750" (total of 4 holes per side) as per dwg D2750.								
	3-Open float holes to .500" (4 per Side)								
	4-Chamfer holes of Detail K, L, ground handling and float holes per dwg D2750 (welding instructions on sheet 9)								
	5-Deburr and blow out all chips from inside of tube								
	6-Prepare tube for welding, remove alodine as required.								
	7-Bond web D2739 in place as per QSI015 A/R <input type="checkbox"/> Sikaflex-291 batch: <u>111345</u> <input type="checkbox"/> <input type="checkbox"/> exp. date: <u>6/11/20</u>								
	8- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D2750 & QSI004 (welding instructions on sheet 9) A/R <input type="checkbox"/> Aluminum Rod batch: <u>1112860</u> <u>BE</u> <u>10/05/27</u>								
	9- At section AP-AP drill out x-bolt spacer to 0.404" <u>BE</u> <u>10/05/27</u>								
	10-Grind welds flush as per Dwg D2750								
	11-Spot face ground handling holes section (total of 4 places per side) as per								

H 10/5/26

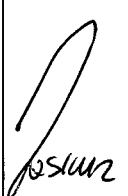

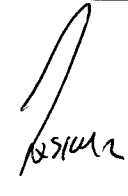
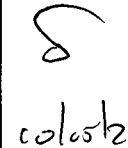
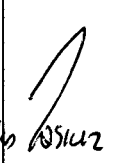



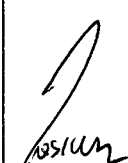



Pto →

) H 10/5/27

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D350-636-012 PAR #: _____ Fault Category: skid holes NCR: Yes No DQA: _____ Date: 10/05/27
 Resolution: rework Disposition: rework QA: N/C Closed: _____ Date: 10/06/10

NCR: <u>58805</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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10/05/27	# 160.6	After welding welder noticed that He had welded Both ends of the bolt space with out Back drill		- Grind welds welds Flush AND Drill out to correct size.	Failed. Drill to Bit wire BE 10/05/27			
		He weld space holes # 13, 16, 17 From Apt. R/L LOA. welder was distracted to go to inspection on other part.		- Drill out adapters x-bolt spaces AND remove - Replace D3490-3 <u>B57918</u> D3490-1 <u>B57723</u> D2743 <u>B57953</u>	M 10/5/27			
				- re weld per Q57004 A/12 <u>M112860</u>	BE 10/05/27			

NOTE: Date & initial all entries

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Item ID: D350-636-012

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Revision ID:

Item Name: Skidtube RH

Start Date: 5/18/2010 Start Qty: 1.00

Required Date: 5/25/2010 Req'd Qty: 1.00

Reference:

Cust Item ID:

Customer:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start
Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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dwg D2750

12-Deburr holes

M 10/9/31

170



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

S 10/05/31

180



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

S 10/05/31

(40)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Start Date: 5/18/2010 Start Qty: 1.00



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Required Date: 5/25/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

190

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

1 *BL* 10-6-1

200

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

Memo

0.00

Powder Coating

START TIME: 1:45pm
OVEN TEMPERATURE: 320°F
FINISH TIME: 2:15pm

⇒ 9U 10/06/01

L 9

210

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

Inspect for foreign object per QSI 024

mm 10 06 08 ①

W/O:		WORK ORDER CHANGES					
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Reference:

Cust Item ID:

Customer:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220	HandFinishing	0.00							
	HandFinish	0.00							
Hand Finishing	Install inserts as per dwg D2750								
230	HandFinishing	0.00							
	HandFinish	0.00							
Hand Finishing	1-Inspect for Foreign Objects								
	2-Spray inside of tube with "LPS-3"								
	batch: <u>N/A ml 10 06 08</u>								
	3-Install blade fitting D3488-042, wearshoes and ground handling hardware as per dwg D2750								
	SIKA FLEX 241								
	BATCH: <u>113435</u>								
	EXP DATE: <u>10/11</u>								
	4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube								
	A/R 55-o'ring lube batch: <u>114189</u>								
	5-Coat all exposed fasteners with "LPS Procyon"								
	batch: <u>104251</u>								

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240	QC5- Inspect part completeness to step on W/O	0.00							
QC	Memo	0.00							
Quality Control									
250	Pick Kit	0.00							
Packaging	Memo	0.00							
Packaging									
260	QC4- 100% Inspect kits for completeness	0.00							
QC	Memo	0.00							
Quality Control									

E 10/06/08

④

10.6-9

SP

S 10/06/10

④

Dart Aerospace Ltd

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Stop

Sequence ID/
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DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

270



Packaging

Packaging

0.00

Memo

0.00

Packaging

Package as per PPP D350-636-012

10-6-10 SP Rec H

280



QC

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

Quality Control

10/06/10 JF

MF 10-6-10

B58805

Dart Aerospace Ltd

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Picklist Print

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Work Order ID: 58805

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Comments: IPP Rev: I 02.09.25 Rearranged procedure steps KJ
 IPP Rev: J 06-03-29 As per Rev D EC
 IPP Rev: K 06-07.13 As per dsi9343 EC
 IPP Rev: L 07-07-28 Added SS Wearplates (Rev E) JLM Verified By: EC

Start Date: 5/18/2010

Required Date: 5/25/2010

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-225

Purchased

No

220

Each

7,062.000

38



Insert

Location

Loc Qty

Loc Code

PK011

7062

110768

7062

AN3C5A

Purchased

No

230

Each

453.0000

34



Bolt

Location

Loc Qty

Loc Code

ST350

325

114330

125

114523

200

ST351

128

113121

10

114108

45

114181

73

AN3C6A

Purchased

No

230

Each

565.0000

4



BOLT

Location

Loc Qty

Loc Code

ST351

565

111982

565

mt 10.06.08

mt 10.06.08

mt 10.06.08

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 IPP Rev: J 06-03-29 As per Rev D EC
 IPP Rev: K 06-07.13 As per dsi9343 EC
 IPP Rev: L 07-07-28 Added SS Wearplates(Rev E) JLM Verified By: EC

Start Date: 5/18/2010

Required Date: 5/25/2010

Start Qty: 1.00

Required Qty: 1.00

★✓ AN6C44A Purchased No 230 Each 101.0000 4
 BOLT

Location	Loc Qty	Loc Code
FG	2	
103964	2	
ST344	99	
111649	2	
114455	47	
114653	50	

MA 10-06-08

★✓ AN8C35A Purchased No 230 Each 56.0000 1
 BOLT

Location	Loc Qty	Loc Code
FP	6	
110847	6	
ST346	50	
114442	50	

MA 10-06-08

★✓ NAS1149C0332R B14341 Purchased No 230 Each 0.0000 38
 washer

★✓ AN960C816L Purchased No 230 Each 106.0000 1
 WASHER

Location	Loc Qty	Loc Code
ST348	106	
110584	100	
111424	6	

MA 10-06-08

MA 10-06-08

Wednesday, May 19, 2010 9:22:55 AM

Shop Packet Print

Page 2

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 IPP Rev: K 06-07.13 As per dsi9343 EC
 IPP Rev: L 07-07-28 Added SS Wearplates (Rev E) JLM Verified By: EC

Start Date: 5/18/2010

Required Date: 5/25/2010

Start Qty: 1.00

Required Qty: 1.00

★ ✓ D2745 Manufactured No 230 Each 146.0000 8
 Bushing

Location	Loc Qty	Loc Code
ST023	146	
52311	69	
57914	77	

MM 10-06-08

★ ✓ D3488-042 Manufactured No 230 Each 19.0000 1
 Blade Fitting Assembly, RH

Location	Loc Qty	Loc Code
FP008	19	
53918	19	

MM 10-06-08

★ ✓ D3492-041 Manufactured No 230 Each 98.0000 8
 Plug Assembly

Location	Loc Qty	Loc Code
FP013	98	
57915	38	
58180	60	

MM 10-06-08

★ ✓ D3492-043 Manufactured No 230 Each 61.0000 8
 Plug Assembly

Location	Loc Qty	Loc Code
FP	2	
54682	2	
FP013	59	
57916	59	

MM 10-06-08

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Page 3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 4

Work Order ID: 58805

Parent Item: D350-636-012

Parent Item Name: Skidtube RH



Comments: IPP Rev: I ☐ 02.09.25 ☐ Rearranged procedure steps ☐ KJ ☐
 IPP Rev: J 06-03-29 As per Rev D EC
 IPP Rev: K 06-07.13 As per dsi9343 EC
 IPP Rev: L 07-07-28 Added SS Wearplates (Rev E) JLM Verified By: EC

Start Date: 5/18/2010

Required Date: 5/25/2010

Start Qty: 1.00

Required Qty: 1.00



 D3535-25 Manufactured No 230 Each 13.0000 1

 Wearshoe

Location Loc Qty Loc Code

FP18 13

57943 13

M/ 10.06.08



 D3536-25 Manufactured No 230 Each 6.0000 1

 Gasket

Location Loc Qty Loc Code

FP12 6

57944 6

M/ 10.06.08

 D3537-1 Manufactured No 230 Each 24.0000 3

 Wearpad

Location Loc Qty Loc Code

FP 1



55465 1

FP17 23

57256 23

M/ 10.06.08

B# 58178

 D3631-1 Manufactured No 230 Each 206.0000 8

 Washer

Location Loc Qty Loc Code

ST076 206

52693 206

M/ 10.06.08

B# 54388

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 5

Work Order ID: 58805

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Comments: IPP Rev: I 02.09.25 Rearranged procedure steps KJ
IPP Rev: J 06-03-29 As per Rev D EC
IPP Rev: K 06-07.13 As per dsi9343 EC
IPP Rev: L 07-07-28 Added SS Wearplates (Rev E) JLM Verified By: EC

Start Date: 5/18/2010

Required Date: 5/25/2010

Start Qty: 1.00

Required Qty: 1.00

★✓ D3672-1 Manufactured No 230 Each 1,375.000 4
Phenolic Washer

Location	Loc Qty	Loc Code
ST077	1375	
51674	375	
52505	1000	

10-06-08

★✓ D3791-1 Manufactured No 230 Each 5.0000 1
Wearplate

Location	Loc Qty	Loc Code
FP17	5	
56299	5	

10-06-08

★✓ D3793-1 Manufactured No 230 Each 10.0000 1
Wearshoe

Location	Loc Qty	Loc Code
FP18	10	
56300	1	
57945	9	

10-06-08

★✓ D3793-3 Manufactured No 230 Each 11.0000 1
Wearshoe

Location	Loc Qty	Loc Code
FP19	11	
57947	11	

10-06-08

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Page 5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 6

Work Order ID: 58805

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Comments: IPP Rev: I 02.09.25 Rearranged procedure steps KJ
 IPP Rev: J 06-03-29 As per Rev D EC
 IPP Rev: K 06-07.13 As per dsi9343 EC
 IPP Rev: L 07-07-28 Added SS Wearplates (Rev E) JLM Verified By: EC

Start Date: 5/18/2010

Required Date: 5/25/2010

Start Qty: 1.00

Required Qty: 1.00

★✓ D3794-1 Manufactured No 230 Each 32.0000 1
 Gasket

Location	Loc Qty	Loc Code
FP010	26	
57942	26	
FP014	6	
57537	6	

10.06.08

★✓ D3794-3 Manufactured No 230 Each 14.0000 1
 Gasket

B# 59153

Location	Loc Qty	Loc Code
FP18	14	
56066	14	

10.06.08

★✓ MS21043-6 Purchased No 230 Each 826.0000 4
 NUT

Location	Loc Qty	Loc Code
ST301	826	
112314	826	

10.06.08

★✓ MS21083C8 Purchased No 230 Each 41.0000 1
 NUT

Location	Loc Qty	Loc Code
ST303	41	
113845	11	
114523	30	

10.06.08

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

Picklist Print

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Page 7

Work Order ID: 58805

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Comments: IPP Rev: I 02.09.25 Rearranged procedure steps KJ
 IPP Rev: J 06-03-29 As per Rev D EC
 IPP Rev: K 06-07.13 As per dsi9343 EC
 IPP Rev: L 07-07-28 Added SS Wearplates (Rev E) JLM Verified By: EC

Start Date: 5/18/2010

Required Date: 5/25/2010

Start Qty: 1.00

Required Qty: 1.00

NAS1611-010



O-RING

Purchased No 230 Each 306.0000 8

Location Loc Qty Loc Code

FP 306
 110715 100
 110915 206

NAS1611-013



O-RING

Purchased No 230 Each 223.0000 8

Location Loc Qty Loc Code

FP 223
 114451 185
 114496 38

AN8C21A



BOLT

Purchased No 230 Each 113.0000 2

Location Loc Qty Loc Code

ST345 113
 111605 23
 113558 50
 114653 40

AN960C816L



WASHER

Purchased No 250 Each 106.0000 1

Location Loc Qty Loc Code

ST348 106
 110584 100
 111424 6

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 8

Work Order ID: 58805

Parent Item: D350-636-012

Parent Item Name: Skidtube RH









Comments: IPP Rev: I 02.09.25 Rearranged procedure steps KJ
 IPP Rev: J 06-03-29 As per Rev D EC
 IPP Rev: K 06-07.13 As per dsi9343 EC
 IPP Rev: L 07-07-28 Added SS Wearplates(Rev E) JLM Verified By: EC

Start Date: 5/18/2010

Required Date: 5/25/2010

Start Qty: 1.00

Required Qty: 1.00

S	D2741		Manufactured	No	250	Each	28.0000		1	10-6-98									
	Blade, 350 Skidtube																		
<table><tr><th>Location</th><th>Loc Qty</th><th>Loc Code</th></tr><tr><td>ST466</td><td>28</td><td></td></tr><tr><td>55905</td><td>28</td><td></td></tr></table>											Location	Loc Qty	Loc Code	ST466	28		55905	28	
Location	Loc Qty	Loc Code																	
ST466	28																		
55905	28																		
S	D3493-1		Manufactured	No	250	Each	33.0000		2	10-6-98									
	Washer																		
<table><tr><th>Location</th><th>Loc Qty</th><th>Loc Code</th></tr><tr><td>ST065</td><td>33</td><td></td></tr><tr><td>57825</td><td>33</td><td></td></tr></table>											Location	Loc Qty	Loc Code	ST065	33		57825	33	
Location	Loc Qty	Loc Code																	
ST065	33																		
57825	33																		
S	D3532-1		Manufactured	No	250	Each	25.0000		2	10-6-98									
	Spacer																		
<table><tr><th>Location</th><th>Loc Qty</th><th>Loc Code</th></tr><tr><td>ST068</td><td>25</td><td></td></tr><tr><td>52321</td><td>25</td><td></td></tr></table>											Location	Loc Qty	Loc Code	ST068	25		52321	25	
Location	Loc Qty	Loc Code																	
ST068	25																		
52321	25																		
S	D3672-13		Purchased	No	250	Each	894.0000		2	10-6-98									
	Phenolic Washer																		
<table><tr><th>Location</th><th>Loc Qty</th><th>Loc Code</th></tr><tr><td>ST077</td><td>894</td><td></td></tr><tr><td>54363</td><td>894</td><td></td></tr></table>											Location	Loc Qty	Loc Code	ST077	894		54363	894	
Location	Loc Qty	Loc Code																	
ST077	894																		
54363	894																		

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Page 8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 9

Work Order ID: 58805

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Comments: IPP Rev: I 02.09.25 Rearranged procedure steps KJ
IPP Rev: J 06-03-29 As per Rev D EC
IPP Rev: K 06-07.13 As per dsi9343 EC
IPP Rev: L 07-07-28 Added SS Wearplates (Rev E) JLM Verified By: EC

Start Date: 5/18/2010

Required Date: 5/25/2010

Start Qty: 1.00

Required Qty: 1.00

MS21083C8

Purchased No

250

Each

41.0000

1

NUT

Location

Loc Qty

Loc Code

ST303

41

113845

11

114523

30

D2600-3-BENT

Manufactured No

110

Each

2.0000

1

Extrusion Bent

Location

Loc Qty

Loc Code

LG

2

55462

1

57538

1

D2744

Manufactured No

110

Each

28.0000

1

Cap

Location

Loc Qty

Loc Code

LG

28

47488

10

51922

18

D2739

Manufactured No

160

Each

1.0000

1

350 I Beam

Location

Loc Qty

Loc Code

LG

1

57948

1

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1358213 ①

10/5/26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 58805



Parent Item: D350-636-012



Parent Item Name: Skidtube RH

Start Date: 5/18/2010

Required Date: 5/25/2010

Comments: IPP Rev: I ☐ 02.09.25 ☐ Rearranged procedure steps ☐ KJ ☐
 IPP Rev: J 06-03-29 As per Rev D EC
 IPP Rev: K 06-07.13 As per dsi9343 EC
 IPP Rev: L 07-07-28 Added SS Wearplates (Rev E) JLM Verified By: EC

Start Qty: 1.00

Required Qty: 1.00

D2743 Manufactured No 160 Each 114.0000 8



Crossbolt Spacer



Location	Loc Qty	Loc Code
LG	114	
50281	10	
52310	24	
57953	80	

D3490-3 Manufactured No 160 Each 31.0000 4



Cross Bolt Spacer



Location	Loc Qty	Loc Code
LG	31	
57918	31	

D3490-1 Manufactured No 160 Each 25.0000 4



Cross Bolt Spacer



Location	Loc Qty	Loc Code
LG	25	
57723	25	

BH BE 10/05/27

4+1 BE 10/05/27

4+1 BE 10/05/27

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D2750-041	350 SKIDTUBE ASSEMBLY, LH
	X			D2750-042	350 SKIDTUBE ASSEMBLY, RH
		X		D2750-043	350 SKIDTUBE ASSEMBLY, LH
			X	D2750-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D2750-1	SKIDTUBE WELDMENT, LH
	1			D2750-2	SKIDTUBE WELDMENT, RH
		1		D2750-3	SKIDTUBE WELDMENT, LH
			1	D2750-4	SKIDTUBE WELDMENT, RH
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
1	1	1	1	D3535-25	WEARSHOE
1	1	1	1	D3536-25	GASKET
3	3	3	3	D3537-1	WEARPAD
8	8	8	8	D3631-1	WASHER
1	1	1	1	D3791-1	WEARPLATE
1	1	1	1	D3793-1	WEARSHOE
1	1	1	1	D3793-3	WEARSHOE
1	1	1	1	D3794-1	GASKET
1	1	1	1	D3794-3	GASKET
38	38	38	38	ALS4-1032-225	INSERT (OR ALS7-1032-225, AKS4-1032-225, AELS-1032-225)
34	34	34	34	AN3C5A	BOLT
4	4	4	4	AN3C6A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
38	38	38	38	AN960C10L	WASHER
1	1	1	1	AN960C816L	WASHER
4	4	4	4	MS21043-5	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

GENERAL NOTES:

- MATERIAL: MAKE D2750-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- FINISH:
ACID ETCH, ALONDE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS OTHERWISE NOTED
- BREAK SHARP EDGES: N/A
- IDENTIFICATION: N/A
- WEIGHT: D2750-041/-042/-043/-044 = 26.5 LBS
- WELD PER DART QSI 004
- INSTALL ALS4-1032-225 INSERTS AFTER FINISH AS INDICATED. DRILL 'F' SIZE HOLES ($\phi 0.297$) FOR WEARSHOE INSERTS
- FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
MINIMUM YIELD TENSILE STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS.
COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY. CLEAN EXCESS OFF
POWDER COATING WITH MEK DEGREASER.
- SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT

WITHOUT NOTICE
WORK ORDER
NO. 58805

BS10-5-19

RELEASED

F	INCORPORATE DSI 9413: QTY (3) D3537-1 WAS QTY (5) (ZN C8-1); D3791-1/3 REPLACES D3535-13/35 (ZN C8-1); D3794-1/3 REPLACES D3536-13/35 (ZN B8-1); ADD D3791-1 (ZN C8-1); WEARSHOE HOLES UNDER FWD/AFT SADDLE REMOVED (8 PL). WEARSHOE HARDWARE QTY UPDATED (ZN B8-1); D3488-041/-042 HARDWARE UPDATED (ZN C1-8, 9, 10, 11); ADD NOTE 12 AND 13 (ZN A6-1); REASON: REF. NCR 08-043	PH	08.07.16
E	CHANGE TO STAINLESS STEEL WEARPLATES; ADD RUBBER GASKETS; CHANGE INSERTS; ADD D3631-1; REMOVE QTY (38) NAS1515H3L; REMOVE QTY (10) NAS1515H8L; REMOVE D2741; QTY (2) AN960C816; REMOVE QTY (2) MS21083C8	CB	07.05.17
D	ADD HOLES AND SPACERS FOR APICAL FLOATS; INCORPORATE DEO 9133/9157	PH	06.01.05
C	ADD D2750-3/D2750-4; INCORPORATE D2738 AND D2740	CP	98.11.18
B	CHANGE MS24694-S293 TO AN8-16A	CP	98.09.01
A	NEW ISSUE	DS	98.04.16
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	08.07.16		
DART AEROSPACE USA, INC. PORT HADLOCK, WA			
DRAWING NO.		REV.	
D2750		SHEET 1 OF 1	
TITLE		SCALE	
350 SKIDTUBE ASSEMBLY		NT	
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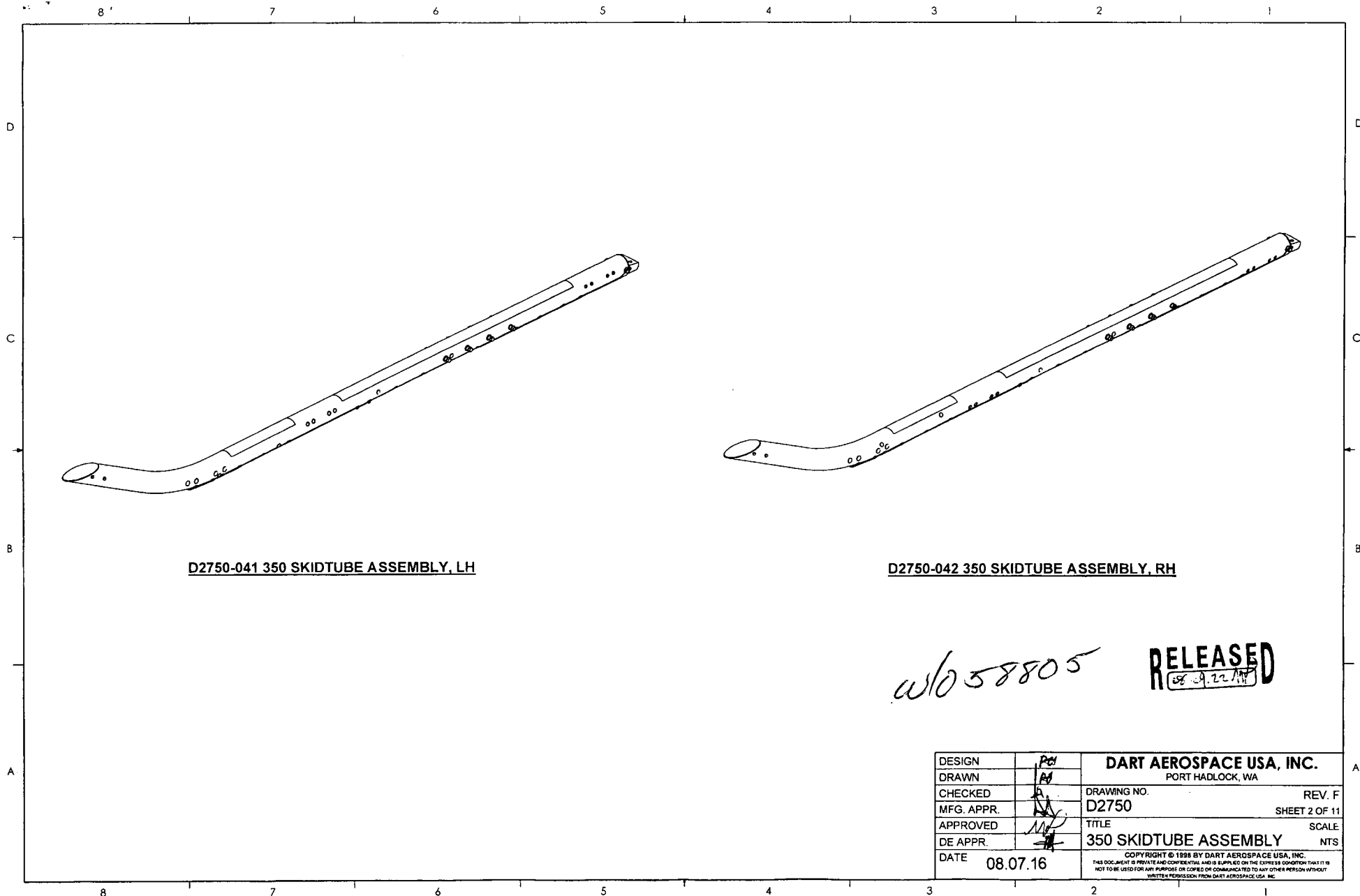
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D2750-042 350 SKIDTUBE ASSEMBLY, RH

D2750-041 350 SKIDTUBE ASSEMBLY, LH

W/058805

RELEASED
08.22.16

DESIGN	PC	DART AEROSPACE USA, INC.	
DRAWN	AM	PORT HADLOCK, WA	
CHECKED	AM	DRAWING NO. D2750	REV. F
MFG. APPR.	AM	SHEET 2 OF 11	
APPROVED	AM	TITLE	SCALE
DE APPR.	AM	350 SKIDTUBE ASSEMBLY	NTS
DATE	08.07.16	<small>COPYRIGHT © 1998 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

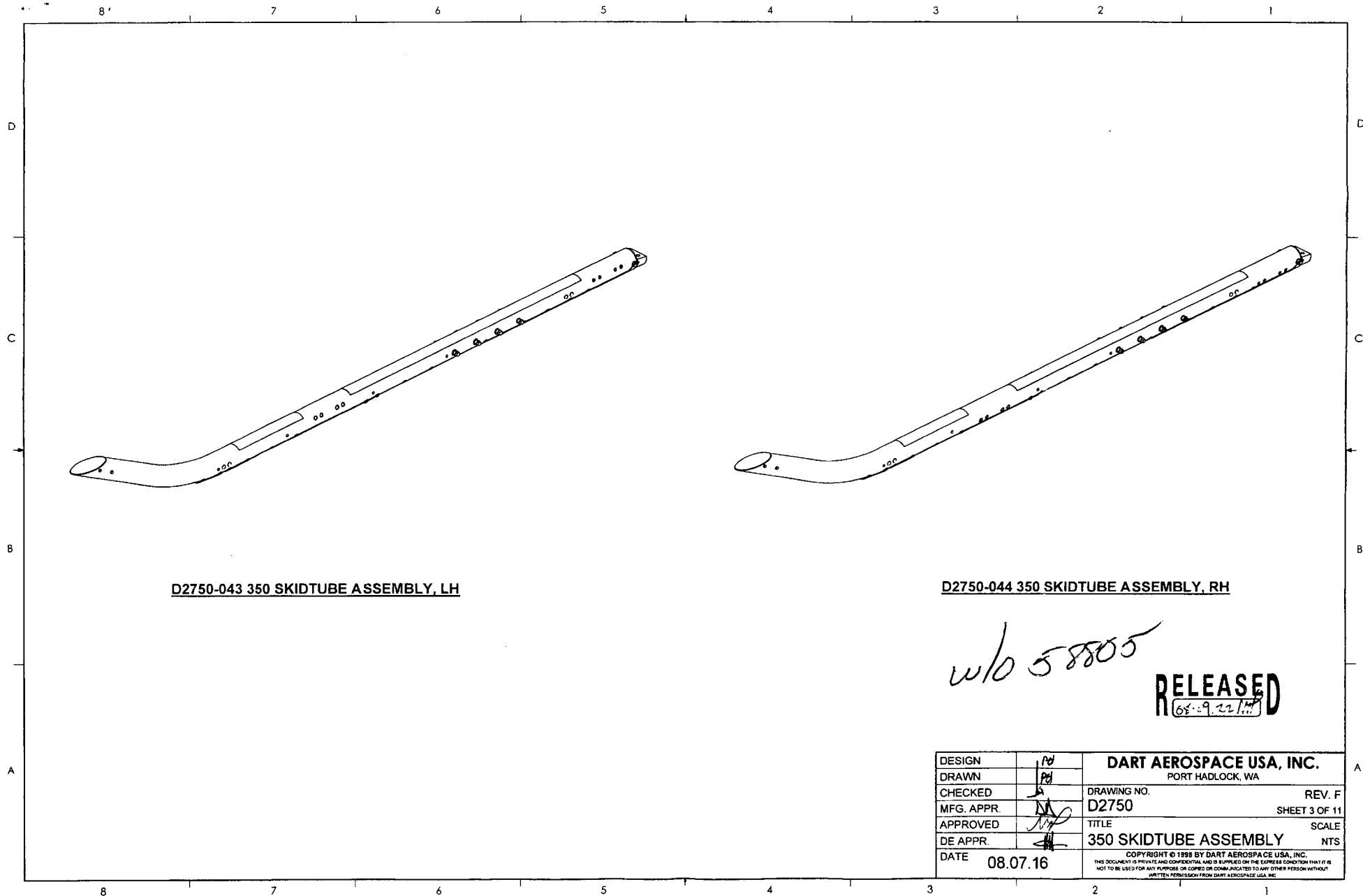
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D2750-043 350 SKIDTUBE ASSEMBLY, LH

D2750-044 350 SKIDTUBE ASSEMBLY, RH

w/o 58805

RELEASED
68-09-22/100

DESIGN	<i>PD</i>	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
DRAWN	<i>PD</i>		
CHECKED	<i>PD</i>	DRAWING NO.	REV. F
MFG. APPR.	<i>MA</i>	D2750	SHEET 3 OF 11
APPROVED	<i>MA</i>	TITLE	SCALE
DE APPR.	<i>MA</i>	350 SKIDTUBE ASSEMBLY	NTS
DATE	08.07.16	<small>COPYRIGHT © 1988 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

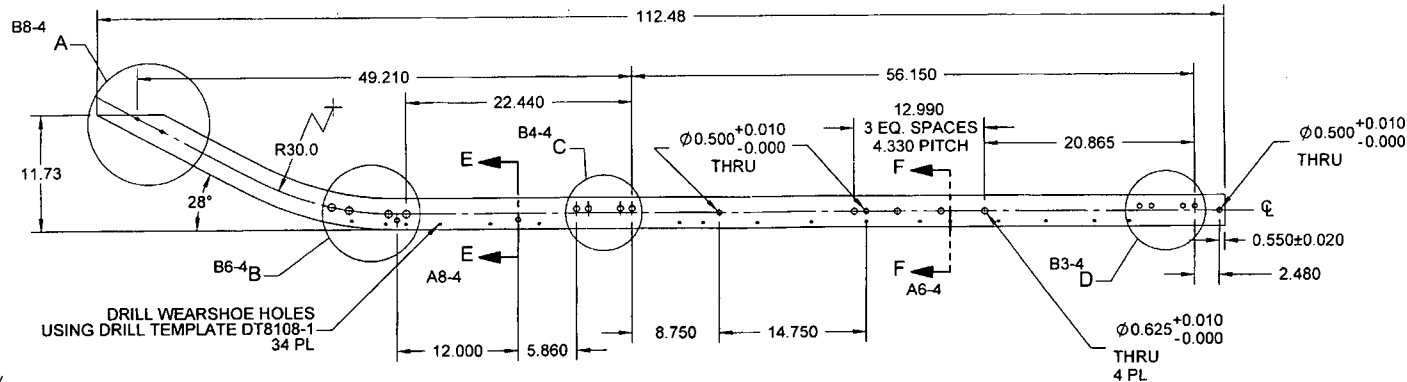
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

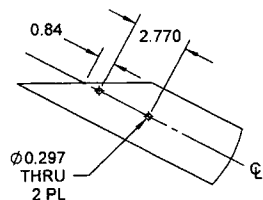
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

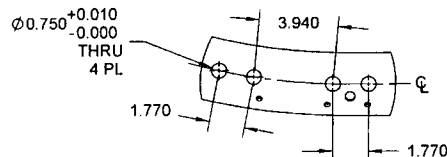
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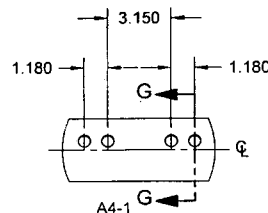
D2750-1 LH SKIDTUBE



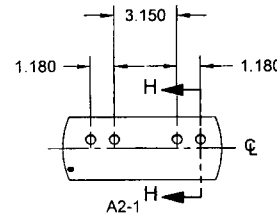
DETAIL A
SCALE 2X



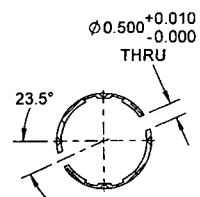
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SCALE 2X



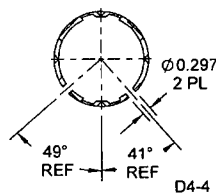
DETAIL C
SCALE 2X



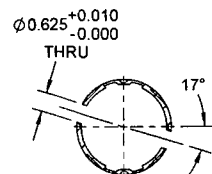
DETAIL D
SCALE 2X



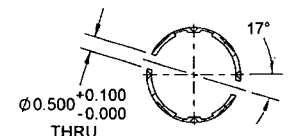
SECTION E-E
SCALE 3X, 2 PL



SECTION F-F
SCALE 3X, 17 PL



SECTION G-G
SCALE 3X, 4 PL



SECTION H-H
SCALE 3X, 4 PL

DESIGN	1/16
DRAWN	1/16
CHECKED	1/16
MFG. APPR.	1/16
APPROVED	1/16
DE APPR.	1/16
DATE	08.07.16

DART AEROSPACE USA, INC.
PORT HADLOCK, WA

DRAWING NO. **D2750** REV. F
SHEET 4 OF 11
TITLE **350 SKIDTUBE ASSEMBLY** SCALE NTS

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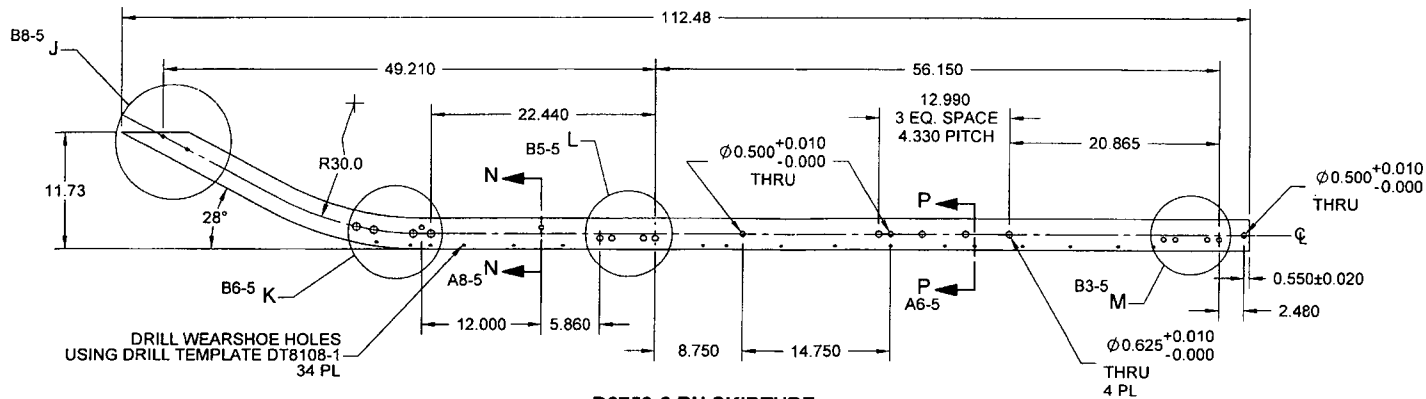
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

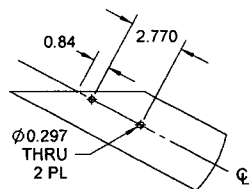
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

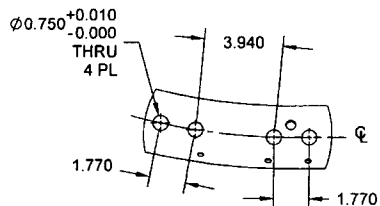
NOTE: Date & initial all entries



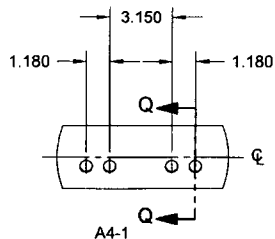
D2750-2 RH SKIDTUBE



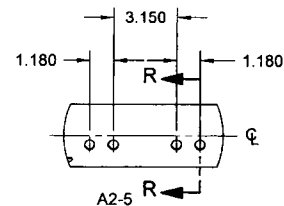
DETAIL J
SCALE 2X



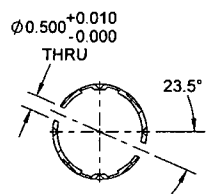
DETAIL K
SCALE 2X



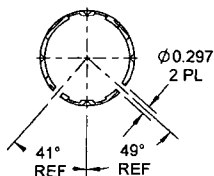
DETAIL L
SCALE 2X



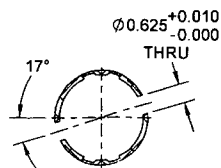
DETAIL M
SCALE 2X



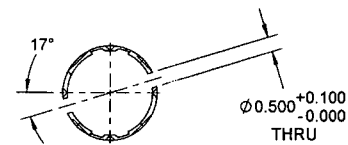
SECTION N-N
SCALE 3X, 2 PL



SECTION P-P
SCALE 3X, 17 PL



SECTION Q-Q
SCALE 3X, 4 PL



SECTION R-R
SCALE 3X, 4 PL

DESIGN	PL	DART AEROSPACE USA, INC.	
DRAWN	PL	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2750	SHEET 5 OF 11
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8

7

6

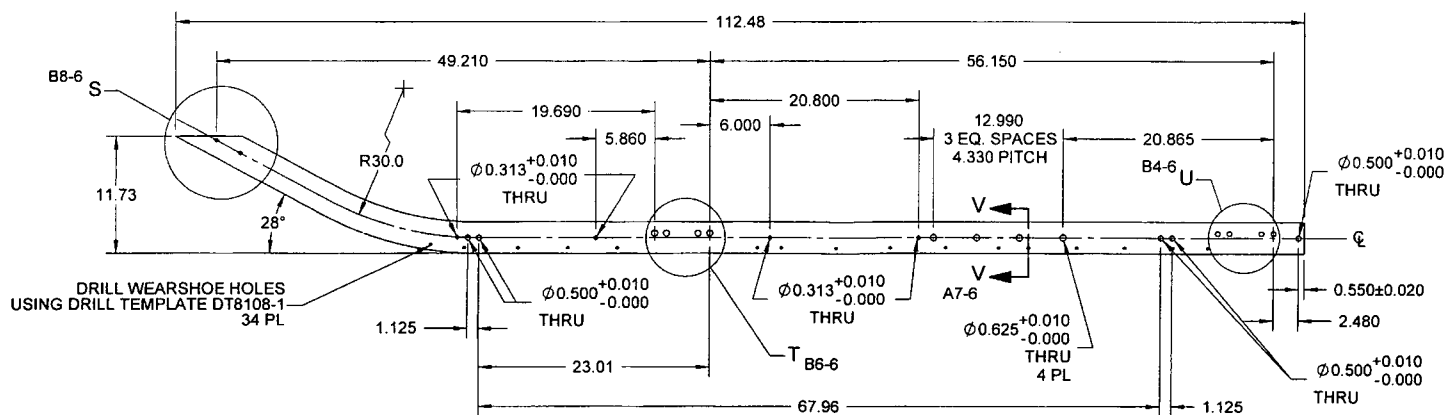
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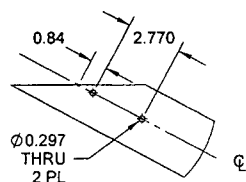
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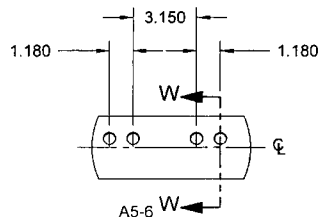
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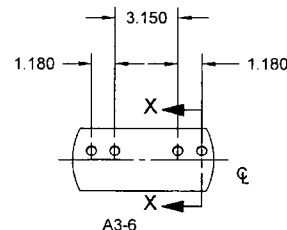
D2750-3 LH SKIDTUBE



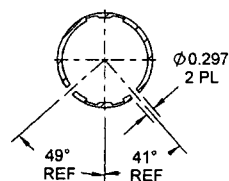
DETAIL S
SCALE 2X



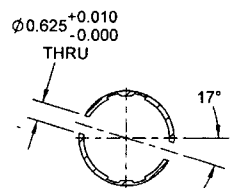
DETAIL T
SCALE 2X



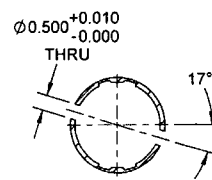
DETAIL U
SCALE 2X



SECTION V-V
SCALE 3X, 17 PL



SECTION W-W
SCALE 3X, 4 PL



SECTION X-X
SCALE 3X, 4 PL

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DESIGN		DART AEROSPACE USA, INC.	
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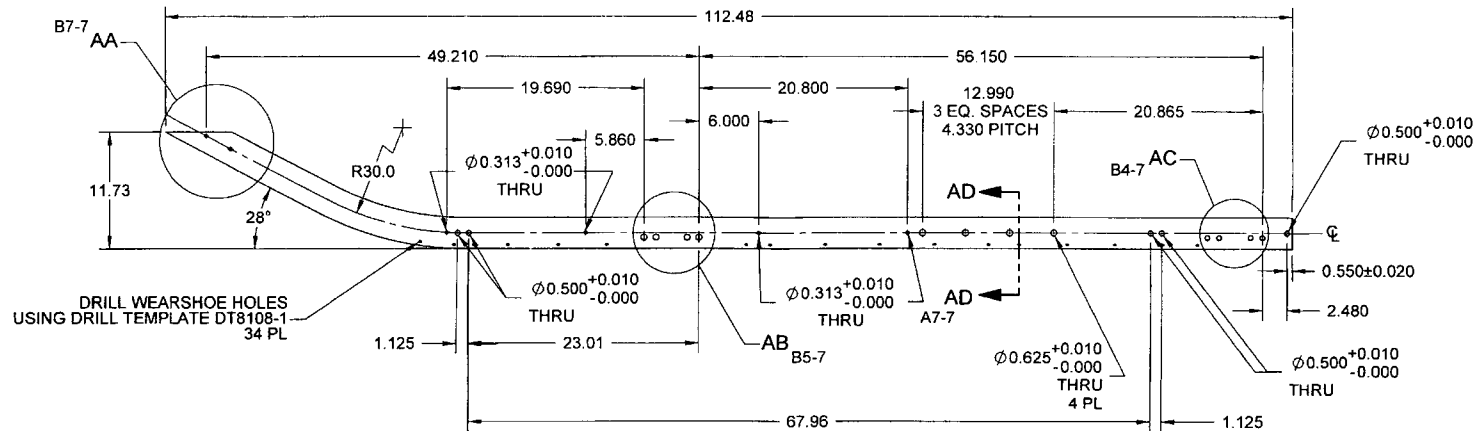
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

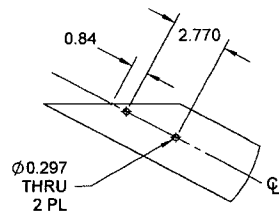
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

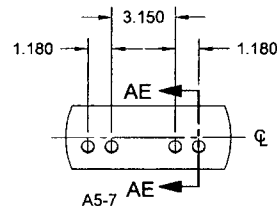
NOTE: Date & initial all entries



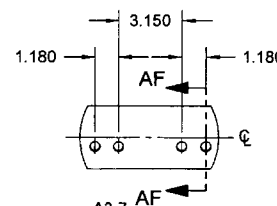
D2750-4 RH SKIDTUBE



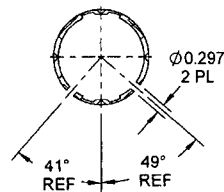
DETAIL AA
SCALE 2X



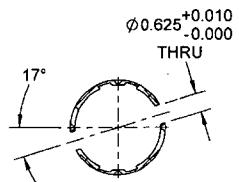
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SCALE 2X



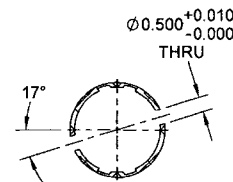
DETAIL AC
SCALE 2X



SECTION AD-AD
SCALE 3X, 17 PL



SECTION AE-AE
SCALE 3X, 4 PL



SECTION AF-AF
SCALE 3X, 4 PL

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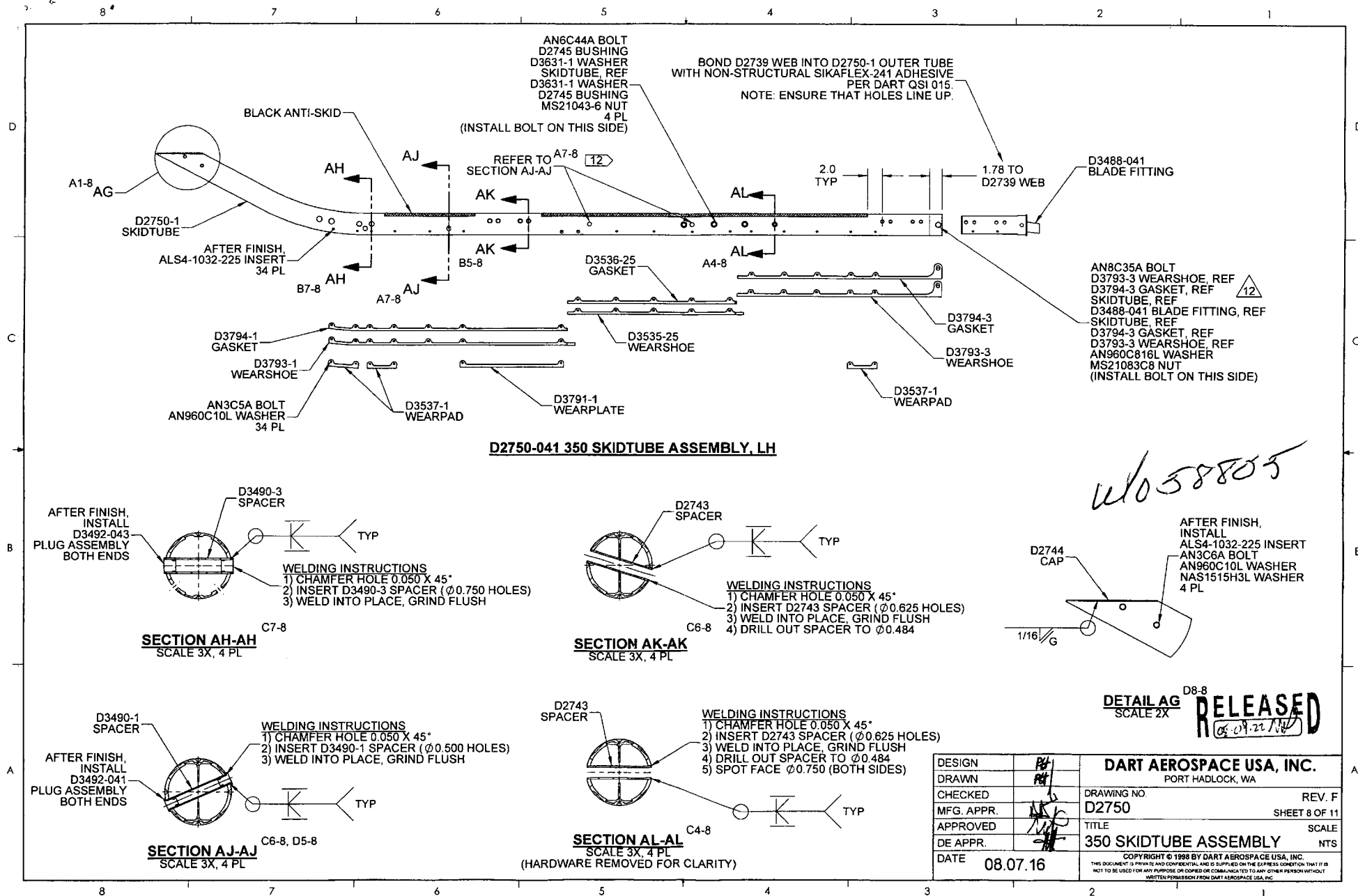
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

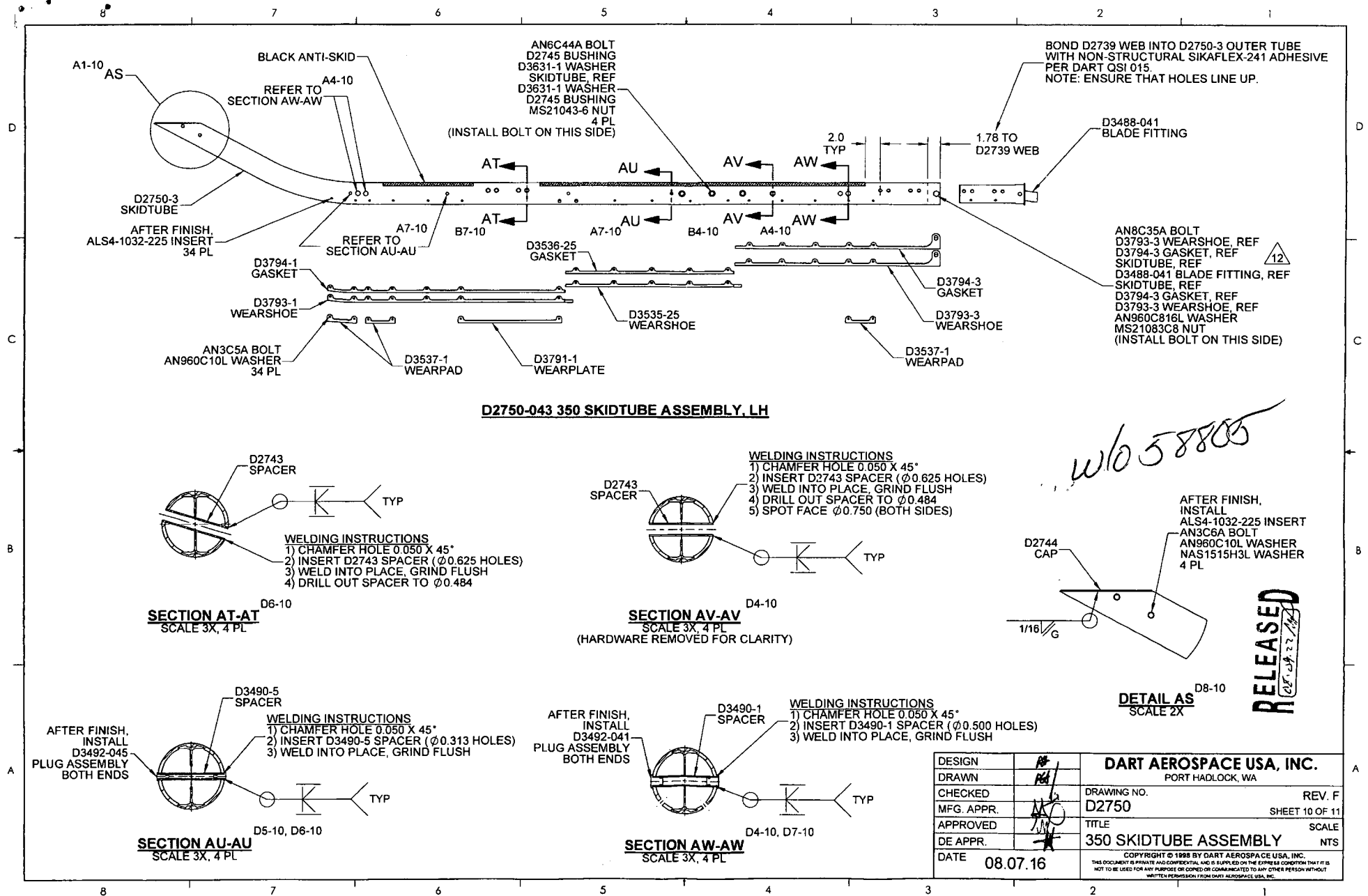
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

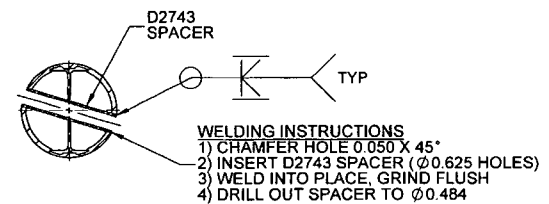
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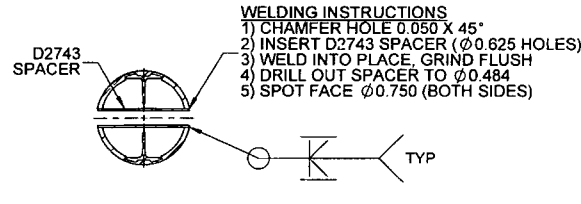
NOTE: Date & initial all entries



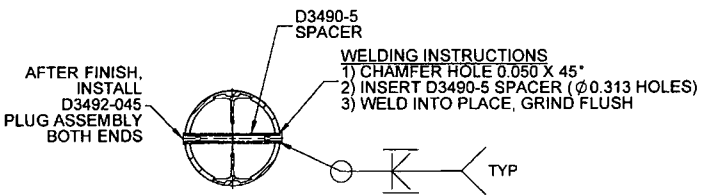
D2750-043 350 SKIDTUBE ASSEMBLY, LH



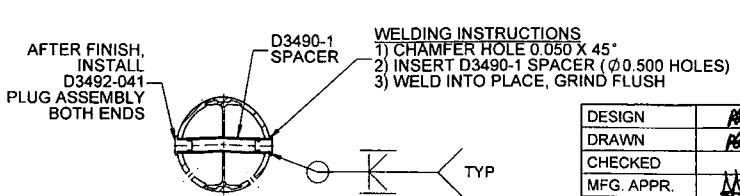
SECTION AT-AT
SCALE 3X, 4 PL



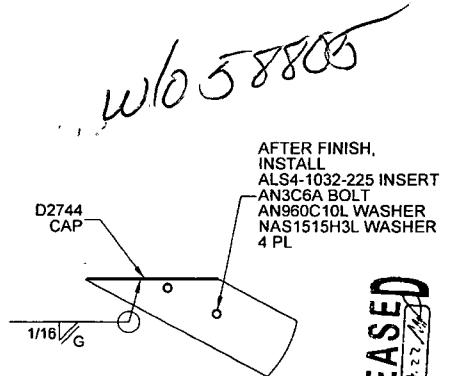
SECTION AV-AV
SCALE 3X, 4 PL
(HARDWARE REMOVED FOR CLARITY)



SECTION AU-AU
SCALE 3X, 4 PL



SECTION AW-AW
SCALE 3X, 4 PL



DETAIL AS
SCALE 2X

DESIGN	AS	DART AEROSPACE USA, INC.	
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MFG. APPR.		D2750	SHEET 10 OF 11
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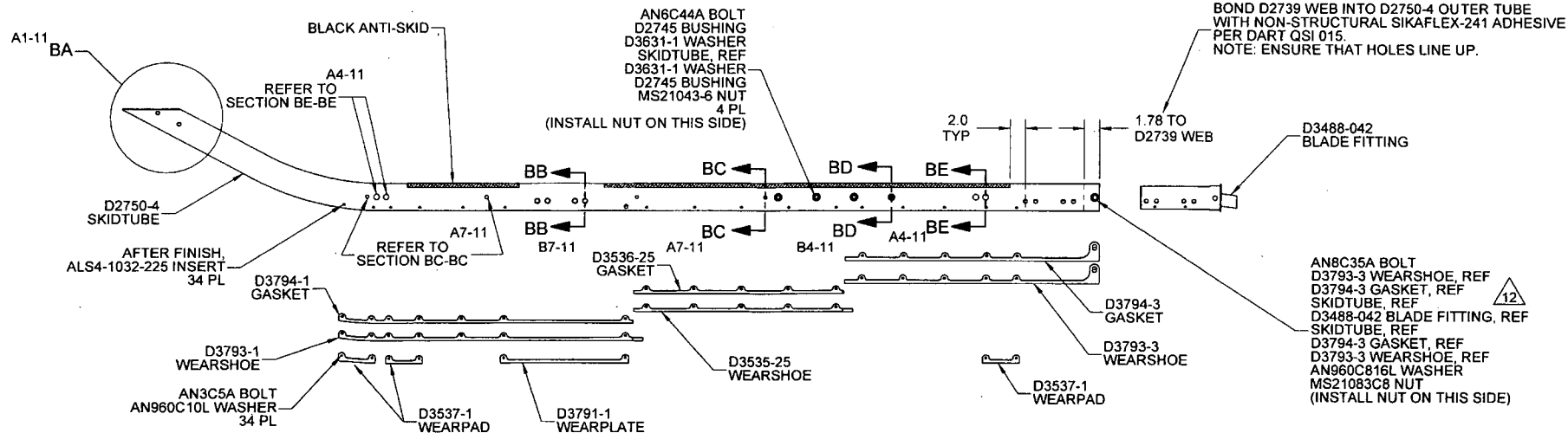
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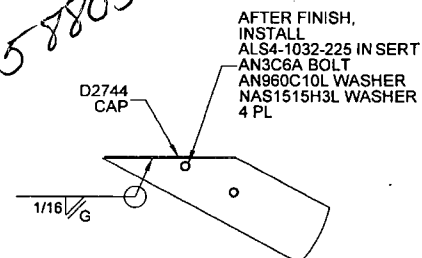
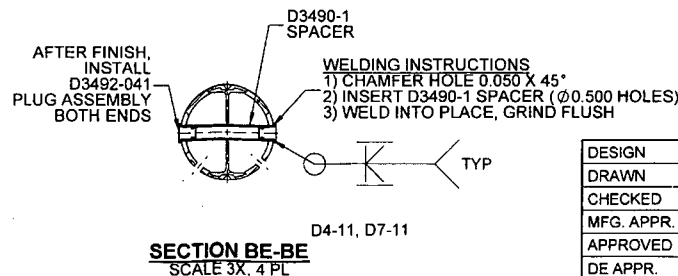
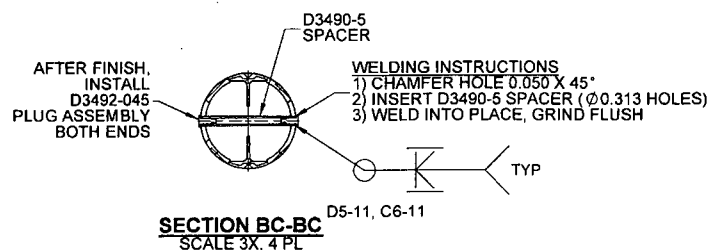
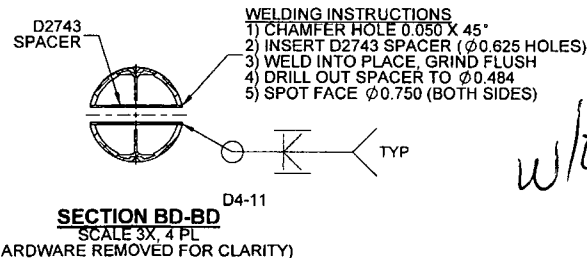
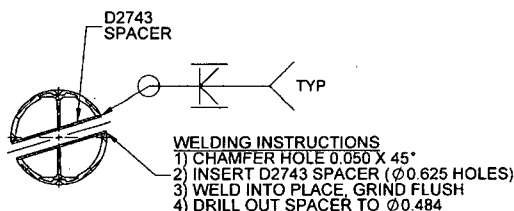
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D2750-044 350 SKIDTUBE ASSEMBLY, RH



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APPROVED		TITLE 350 SKIDTUBE ASSEMBLY
DE APPR.		SCALE NTS
DATE	08.07.16	

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 229

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 58109
Part number: D350 6x6 02
Description: 350 skid tube
Welding Process: Tig[☒] Mig[]
Base material: Aluminium
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[]
Penetration: pass[☒] fail[]

UNACCEPTABLE

Cracks: pass[☒] fail[]
Undercut: pass[☒] fail[]
Pin holes: pass[☒] fail[]
Overlap (cold lap): pass[☒] fail[]
Porosity (surface): pass[☒] fail[]
Coloration: pass[☒] fail[]

Qualifier Pat. D. 1 Date of Test Coupon 10-04-27

Welder Barclay Elliott Date of Test Coupon 10-04-27

The above named individual is qualified in accordance with AWS D17.1.2001 to weld